

MEMOIRS
OF THE
TORREY BOTANICAL CLUB

Vol. VI

No. 4

A Review of the Genera of Ferns proposed prior to 1832

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The problem involved in the natural limitations of fern genera has given rise to as much difference of opinion as any question connected with the systematic study of plants, as the amount of literature bearing on the subject fully attests. With slight modifications and differences, the later Hookerian* system of a few genera founded mostly on purely artificial characters has hitherto been followed in America and has no doubt been productive of advantage in the study of so limited a flora as our own, because of its simplicity; but the time has passed for this sort of contraction and we must look at fern genera from the broader standpoint of other English and continental writers and attempt to replace the unjust, unnatural, and unscientific system that has become stereotyped worldwide by its advantage of utility, by other and better systems that have been proposed.

We have characterized this system as the *later* Hookerian system since it is strikingly in contrast with the one faithfully portrayed in the elder Hooker's *Genera Filicum*, whose merit was really due, as stated in the preface to that work, to its high artistic character, reflecting through the power of Bauer's splendid delineations the system already proposed by Presl in a masterly yet far more simple manner.

* As expressed by Sir W. J. Hooker in *Species Filicum*, and Hooker and Baker in *Synopsis Filicum*. The leading differences heretofore maintained by American botanists have been: (1) The separation of *Phegopteris* from *Polypodium*, (2) The separation of *Camptosorus* from *Scolopendrium* and (3) The unfortunate union of *Aspidium* and *Nephrodium*.

We have spoken of the later Hookerian system as unjust because it ignores in too many cases the claims of prior publications; as unnatural because it associates together in the same genera forms of growth, that have no natural association or alliance whatever, but are thrown together because they possess the accidental peculiarity of some such secondary or trivial character as "no involucre" or "sori following the veins and like them free, forked or anastomosing," thus making of genera unholy alliances of unrelated entities instead of natural groups of closely associated species. One has only to compare the heterogeneous assemblages of plants arrayed in *Synopsis Filicum* under such generic names as *Gymnogramme*, *Acrostichum*, *Polypodium*, *Dicksonia*, and *Davallia*, to appreciate the unnatural character of these generic concepts. The members of a natural genus should resemble one another sufficiently to enable one to attribute to them a monophyletic origin. We have spoken of the system as unscientific for the same reason, added to the fact that it has largely ignored anything except the superficial leaf form and soral arrangement of the sporophyte in the separation of genera and the determination of affinities, leaving in the background the biological characters of the stem, habit alliances, and the subject of venation, so important in the study of affinities in any modern sense. In short, the whole later Hookerian system of genera is the natural result of a too exclusive study of herbarium sheets and a convenient method of rapidly "pigeon-holing" a lot of plants that must be named for correspondents, rather than a logical scientific study of the living fern world and the interrelations of its diversified forms.

If we are to have genera simply as a matter of convenience for naming plants, then this system is, perhaps, as good as any that has been proposed; but if we are to look upon genera as natural groups of allied species, then we must seek for a more exact representation of the fern world, holding ever in view the fact that in many cases where the links of the evolution are still in existence certain genera like some species will necessarily intergrade. It must further be borne in mind that no system founded with Linnaean concepts of species can fit an organic world of progressing organisms formed on a Darwinian or Lamarckian plan.

No one can question two facts stated by Hooker, namely, that

his own herbarium collection (since his day greatly augmented by the vast accumulation of recent and much more perfect examples from all parts of the world) is the richest in existence,* and that the collection of growing ferns at Kew Gardens is one of the largest collections in the world, but with the last circumstance in mind, it seems incredible that this collection of living plants has played so insignificant a part in the system of generic classification of any of the Kew workers, with the single exception of John Smith, so long head gardener at Kew, whose review of fern genera† presents a system infinitely more natural, logical, and scientific than that of the system under discussion. The merits of Smith's system were indeed recognized by Hooker, but unfortunately not followed in the slightest particular in Hooker's later publications nor in those which have followed him, as these have faithfully carried out the plans which Hooker so clearly laid down. And thus it is that we in America have too long continued to speak of the delicate *Nephrodium punctilobulum* of Michaux as a *Dicksonia*—a genus based on tree ferns of the Southern Hemisphere and belonging to an entirely different family from our own species, because, forsooth, all the plants of these genera agree in having "inferior cup-shaped or bivalved indusia," and in our newly acquired Sandwich Island territory we are asked to regard the noble species of *Cibotium* in the same category! In short the *Synopsis Filicum* of 1874 with its supplements extending to the present time, while describing often in too comprehensive a manner (and with little regard for geographic distribution as a factor in specific distinctions) five times the number of species of ferns of the first *Synopsis Filicum* of 1806,‡ in its representation of genera is little in advance of its original namesake. And while Hooker's *Species Filicum* will always stand as a classic in the characterization of species, in its

*The fern collection at Kew is contained in thirty-six cases, each with sixteen compartments 13.5 cm. deep. *Pteris* fills nearly two cases, *Asplenium* four cases, *Aspidium* and *Nephrodium* together six cases, *Phegopteris* and *Polypodium* together five cases, and *Acrostichum* about two cases. These data will enable those who have never visited Kew to form some idea of the vastness of the collection.

† *Historia Filicum*, 1875; and earlier papers commencing with his first discussion of Fern genera, Hooker's Journ. Bot. 4: 38-70; 147-198. 1841; London Journ. Bot. 1: 419-438; 659-668. 1842.

‡ Swartz, *Synopsis Filicum*, 1806.

treatment of genera, it is systematically as unsatisfactory as is *Synopsis Filicum* in its treatment of species.

With the purpose then of arriving at the foundations of the problem of fern genera, and actuated by the spirit of Lincoln's aphorism, "If we could first know where we are and whither we are tending, we could better judge what to do, and how to do it," we shall seek for a rational basis for the system by reviewing historically the fern genera that successive authors have proposed, with a view of recognizing in accord with principles of justice the earlier established genera and the foundations on which they rest. To do this more satisfactorily we have thought it wise to separate the problem into two periods and treat the earlier and more fundamental somewhat independently. We have selected the year 1832 as a convenient line of separation, as that will place in the second period all the wholesale establishments of genera by the later writers, especially Presl, Fée, Moore, and John Smith. The period commences with 1753 and closes with the completion of Hooker and Greville's *Icones Filicum*, 1831.

In this study of generic foundations there is necessarily little that is novel except that the principles which we shall follow in this recognition of genera involve certain elements in which there is neither uniformity of practice among taxonomists nor authoritative ruling. It is, therefore, best to state the basis on which the recognition of the rights of genera will here proceed. We will give sufficient data, however, selected after an extended bibliographic research which includes all the original publications of fern genera* so that others working from other principles may be enabled from these data to base their own conclusions.

The principles here followed are :

1. Only genera established in Linnaeus' *Species Plantarum* ; 1753, or later are considered. (Rochester Rules.)
2. No genus is considered as established unless it is : (a) Based on one or more previously described species which are referred to

* In addition to home facilities, the libraries of Kew Herbarium and the Berliner Hof-Museum, together with the splendid collection of serials at the British Museum (Cromwell Road) have furnished most of the rarer references, but a few were not to be found even in these extensive collections. For one of Kaulfuss' rarer papers we were indebted to the unique library of the Surgeon-General's Office at Washington, and Professor E. L. Greene's library furnished the only available copy of *Deliciae Pragenses*.

with sufficient directness as to be recognizable, or (b) Based on some species which is described for the first time at the establishment of the genus itself. Generic names founded with no hint of a species on which they can rest as a type will not be considered as holding any priority rights against genera capable of being anchored to definite type species.*

3. For each genus established the first named species will be regarded as the type, and to insure stability of nomenclature, and to prevent the shifting of generic names to groups of species wholly unlike those for which the original author founded the name,† it will be regarded as essential that the type species and the generic name shall be inseparable and shall be maintained or reduced to synonymy according to the necessities of the case.

In the application of this rule the following exceptional cases must be noted: (a) In the genera of Linnaeus' *Species Plantarum* of 1753, the fact must be borne in mind that while the genera date from 1753, they did not all originate with *Species Plantarum* or even with Linnaeus. These Linnaean genera must then be traced to their type species wherever they originated. In case the original generic name was used in another sense than that in which it was adopted by Linnaeus,‡ the type of the genus *in the Linnaean sense* must be determined wherever it was first used; and (b) In genera established with a definite statement of the type on which the author founded the genus, this type must have preference even tho in a subsequent list of species it is not the first enumerated.§

* Previous discussion of the subject of generic stability has appeared hitherto by O. F. Cook in Bull. Torrey Bot. Club, 22: 431-434. 31 O. 1895, and in Science, II. 8: 186-190, 12 Au. 1898; 513-516. 14 O. 1898. Dr. B. L. Robinson has also partially stated the problem in Bot. Gaz. 25: 437-445. Je. 1898.

† That this has often happened in the past can be shown in many cases, *e. g.*, *Nephrodium*. This genus, the † *Eunephrodium* of Synopsis Filicum, has been limited to species of *Aspidieae* with reniform indusia and veinlets of contiguous groups united, whereas the genus *Nephrodium* as established by Richard in Michaux's Flora Bor. Am. was based entirely on free veined species of *Polystichum* and *Dryopteris* and does not contain a single species of the group to which it has been thus limited!

‡ As, *e. g.*, *Trichomanes*, whose type was *Asplenium Trichomanes* as known to Linnaeus. *Hemionitis* and *Lonchites* are other examples; see below under 1753.

§ While no general ruling has ever been made on this question, many botanists profess to use the so-called "method of residues"; but even here, no systematic attempt has ever been made to carry out this principle, and many known exceptions occur in prac-

4. While homonyms that may in the future interfere with stability are not to be admitted as valid genera, the extreme and inflexible application of the law to those cases where interference is clearly impossible is neither necessary nor desirable. Such cases as that of *Angiopteris* Hoffm. will not be displaced because of a homonym of this nature.

5. In general, the laws of evidence and interpretation usually recognized will be followed with the view of ascertaining an author's intended meaning. Mere technicalities based on legal quibbles have no place in a rational system of nomenclature. Here, as elsewhere, it is "the letter that kills but the spirit that maketh alive."

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With these principles in view we proceed to a brief historical

tice. The method of "residues" works on the principle that the last species remaining in the genus from those originally named by its author when the genus was founded shall constitute the type of the genus and shall hold the generic name. This method, moreover, has the disadvantage of being variously interpreted by different people. While it may be true that early writers did not always name the most typical species first, it is equally true that the last species to remain in the genus after division has taken place is less likely to be a typical form; in fact, if doubtful or little known species are placed in a genus originally, these are the very ones which are unlikely to be taken away from the original group to form other genera. The system of "residues," moreover, has a shifting instead of a fixed type, varying as more and more of the original species are taken out to form other genera, thus leaving a smaller and smaller residue.

A few of the many reasons for accepting the principle of the first species under a genus, instead of that of "residues" are the following:

1. It is more direct, simple, and natural in its application.
2. It is strictly in accord with a system which recognizes priority of publication as a fundamental principle. It conforms with the practice generally in use for recognizing the type of a species originally described from composite material.
3. It is in accord with a starting point for genera (1753) which in the absence of generic descriptions can only base its original genera on species instead of generic descriptions.
4. It is of universal application, while the principle of residues, besides being capable of various interpretations, cannot be applied to the many cases in which several genera each containing numerous species were organized independently at nearly the same time. As a test of this, let the believer in residues attempt to adjust generic limitations on the groups involved in *Polystichum* Roth (1800), *Aspidium* Swz. (1801), *Tectaria* Cav. (1801), and *Nephrodium* Rich. (1803)—generic groups based on similar but varying aggregates of species.
5. It is the least unjust to the author of genera based originally on several species.
6. It anchors a generic name to a species with which it must rise or fall, according as that type species is or is not a part of a distinct generic group, and prevents it from being shifted along to a smaller and smaller group, or even of being shifted to a group of species of which its original describer knew nothing.

review of the 189 fern genera proposed by the forty-three authors who wrote on ferns during the period 1753-1831 arranged in chronological order, and supplemented by an alphabetical tabular summary of the resulting necessary synonymy:

1753

Linnaeus (*Species Plantarum*) recognized the following genera of ferns:

1. ONOCLEA (1062) with a single species, *O. sensibilis*. The generic name was established in *Amoen. Acad.* 3: 20. 1751, and Linnaeus needlessly displaced an earlier name, *Angiopteris* Mitch., which he quotes as a synonym. The practice thus early inaugurated by Linnaeus of arbitrarily replacing well-established names for others was commonly followed by his successors, and even yet is practiced in some quarters, and has been the cause of much of the present unsettled condition.

2. OPHIOGLOSSUM (1062) with *O. vulgatum* and five other species of which two are now species of *Lygodium*. The genus was founded by Tournefort (*Inst.* 548. *pl.* 325. 1700), on the European *O. vulgatum*, and was thence accepted by Linnaeus (*Gen. Pl.* 322. 1737) and in *Hort. Cliff.* 472, where three species were noted. According to Sprengel this name was first used by Tragus, 1551.

3. OSMUNDA (1063) was a curious composite based on seventeen species* now distributed among many diverse genera. The genus dates back to Tournefort (*Inst.* 547. *pl.* 324. 1700) and is based on the European *O. regalis*; it was first adopted by Linnaeus (*Gen. Pl.* 322. 1737) who cites Tournefort, and in *Hort. Cliff.* 472, five species are noted. According to Sprengel, the name was first employed by Lobel in 1571.

4. ACROSTICHUM (1067) included twenty-five species which are known to-day under the genera *Asplenium*, *Woodwardia*, *Notholaena*, *Woodsia*, *Gymnogramma*, *Schizaca*, *Todea* and others.

The original *Acrostichum* appears to be that of Linnaeus (*Gen. Pl.* 322. 1737) who cites numerous figures of Plumier, and Tour-

* We have already discussed the generic limitation Cf. *Bull. Torrey Bot. Club*, 25: 522-525. 1898. The recent attempt to abandon the generic name, *Osmunda*, is contrary to both the spirit and the letter of nomenclature. Cf. *Proc. Biol. Soc. Washington*, 13: 63. 1899.

nefort's genus *Ruta Muraria*. In Hort. Cliff. 475, five species are cited of which the first is the one we know as *A.* (*Chrysodium*) *aureum* which may justly stand as the type of the genus, a conclusion reached by Moore* and others who properly divide the composite as recognized by Hooker into its numerous well-marked genera.

A. lanceolatum, the first species mentioned by Linnaeus in *Species Plantarum*, is a *Polypodium* (§ *Niphobolus*).

5. PTERIS (1073) was adopted with nineteen species all but three of which were American. Linnaeus appears to have first used the generic name as such (Gen. Pl. 322. 1737) citing Plumier's plates 5, 14, 15, 29, 37, 51, 68, 69, 105, 132, 140, 141, 152, and in Hort. Cliff. 473, six species were cited from Plumier's plates 152, 75, 106, 69, 29, and one European species. As Plumier's plate 5 represents *Pteris arborea* L. the fifth species in *Species Plantarum* we may safely regard that as the type of the genus.

6. BLECHNUM (1077) was the only genus founded in *Species Plantarum* and was based on two species, *B. orientale* (Amer. Merid.) and *B. occidentale* (China)† and forms a well-defined genus. *B. orientale*, the American species, will form the generic type, and both species are fortunately congeneric.

7. HEMIONITIS (1077) was adopted for two species, *H. lanceolata* and *H. palmata*, both from tropical America. The original *Hemionitis* of Bauhin and Tournefort‡ was the plant from southern Europe now known as *Asplenium Hemionitis* to which alliance it was correctly relegated by Linnaeus himself. The Linnaean genus was established in Cor. Gen. Pl. 20. 1737, based on Plumier's *pl.* 151 and in Hort. Cliff. 477, he cites the same species. As these references are to *H. palmata* that plant must be regarded as the type of the Linnaean genus.

8. LONCHITIS (1078) was based on three tropical American species, *L. hirsuta*, *L. aurita*, and *L. repens*. The original *Lonchitis*§ of Tournefort|| is *Polypodium Lonchitis* L., which afterwards became

* *Index Filicum*, xxi. 1857.

† Later writers have curiously interchanged these original names perhaps not wisely.

‡ Inst. 546. *pl.* 322, 323. 1700.

§ The *Lonchitis aspera* of Bauhin's Pinax, 359.

|| Inst. 538. *pl.* 314. 1700.

the type of the genus *Polystichum* Roth. Linnaeus adopted the name *Lonchitis* (Gen. Pl. 322. 1737) for Plumier's plants represented in *pl.* 17, 20, the former being *L. aurita* and the latter *L. hirsuta*. It is thus rational to regard *L. aurita* as the type of the Linnaean genus.*

9. ASPLENIUM (1078) appears to have originated generically with Tournefort (Inst. 544) where *Ceterach*, a somewhat common European fern, is its only foundation. Linnaeus first used the name in *Genera Plantarum*, 322, in which he cites numerous plates from Plumier (13, 19, 41, 46, 59-61, 67, 74, 103, 106, 124, 133†) and adds *Lingua cervina* (= *Phyllitis Scolopendrium*) and *Trichomanes* (= *Asplenium Trichomanes*) of Tournefort. In Hort. Cliff. published the same year, he included five species of which *Lingua cervina*, *Trichomanes*, *Marina*, and *Ceterach* are European and Plumier's plate 59 forms the fifth. The name *Asplenium* was used by Matthiolum, 1560, and even by Dioscorides.

In *Species Plantarum* twenty species are enumerated and as is usual the list commences with those with simple leaves, *rhizophylla* (= *Camptosorus*) being first named; curiously enough this involves three species which range in distribution from Jamaica to Siberia! The genus, however, is a more natural group than many of the Linnaean genera, altho several genera have been properly separated from among these twenty species.

We must historically then limit the type of *Asplenium* to the *Ceterach officinarum* of Bauhin's Pinax and of the other pre-Linnaean herbalists. As this is surely a clearly defined generic group distinct from *Asplenium* although united to it with many other strange bedfellows in *Synopsis Filicum*, the acceptance of the principles of historic interpretation and generic types here followed will necessitate the relegation of the numerous species of *Asplenium* to another generic alliance. While changes in nomenclature are

* This genus well illustrates the ridiculous and confusing practice of the botanists of the past generation with reference to generic limits. The genus "*Lonchitis* Linn." of Hooker and Baker's *Synopsis Filicum* contains the two species *L. pubescens* Willd. and *L. occidentalis* Baker with no reference to the original species except a doubtful comment on *L. aurita* in a note.

† While the greater part of these belong to *Asplenium* as used by modern writers, plate 13 represents a sterile plant of *Pteris pungens* Willd. and plate 19 represents a species of *Diplazium*.

always unfortunate, they are our inheritance from the lack of system of the past generations of botanists, and can never be rationally used in an argument where principles of nomenclature only are involved.* In this case many of the species have already been placed under the genus *Athyrium* which appears to be the next in line.

10. POLYPODIUM (1082) as a genus took its origin from Tournefort (Inst. 540. *pl.* 316), tho the name had been used by Theophrastus, and is based on *P. vulgare*, the common European species. Linnaeus (Gen. Pl. 1737) included *Lonchitis* Tourn. (*Polystichum Lonchitis* Roth) in the genus. In Hort. Cliff. 474 *P. vulgare* is the fourth species mentioned. In *Species Plantarum* 58 species (of which over 60 per cent. are American) are included, of which *P. lanceolatum* (§ *Phymatodes*) is the first named and the genus includes species of *Phegopteris*, *Polystichum*, *Dryopteris*, *Filix*, *Cyathca* and other modern genera.

11. ADIANTUM (1094) also takes its origin from Tournefort (Inst. 543, *pl.* 317), tho the name had been used by Dioscorides, and is naturally based on the common European species *A. capillus-Veneris*. Linnaeus (Gen. Pl. 322. 1737), quotes Tournefort, and in Hort. Cliff. 473 includes four West Indian and Bermuda species. In *Species Plantarum* 15 species are included, two-thirds of which are American; as in all his fern genera the simple species are first described, *A. reniforme* of Madeira is naturally the first named.

12. TRICHOMANES (1097) was established by Linnaeus (Cor. Gen. Pl. 20. 1737, and Hort. Cliff. 476), as a monotypic genus based on Plumier's plate 86 which is *Trichomanes crispum*. The original *Trichomanes* of Tourn. (Inst. 539. *pl.* 315. 1700) was *Asplenium Trichomanes* as recognized by Linnaeus when he established the latter genus. In *Species Plantarum*, Linnaeus gives eleven species of *Trichomanes*, of which six are American, but includes besides filmy ferns of the genus *Hymenophyllum*, certain thin leaved species of *Davallia*; the first species mentioned is *T. membranacum*, also a true *Trichomanes*, but *T. crispum* is clearly the legitimate type of the Linnaean genus.

* Unfortunately one of the first questions that arises in many minds in considering any question of nomenclature is not "Is the principle a correct or rational one" but "How much change will it involve." So long as this mental condition is rampant a stable rational system is practically impossible.

1756

Hill, in his British Herbal, recognized a series of genera, one of which Professor Greene has recently accepted, and he restored the name *Lunaria*, based on what is now *Botrychium lunaria*, but which was unfortunately adopted by Linnaeus for a genus of flowering plants, and used *Phyllitis* for *Asplenium Scolopendrium*; while most of Hill's plants are figured and clearly recognizable, it still remains a patent fact that his generic groups are arranged to correspond to the usage of the apothecary shops and not named in the Linnaean sense, and certainly such generic (?) names as *Lonchitis-aspera*, *Capillus-Veneris* and *Adiantum-nigrum* cannot be accepted as properly published genera.

1757

Ludwig (Inst. Hist. Phys. Reg. Veg. 142), in his synoptic tables adopted the genus *Phyllitis* based on Tournefort's "*Lingua Cervina*," which appears to be the earliest botanical use of this name as applied to our "Hart's tongue" fern. No other novelties appeared in this little-known work; many later writers of the last century adopted the same generic name which must replace the later *Scolopendrium*.

1760

Scopoli (in the original edition of *Flora Carniolica* 168), established the genus *Struthiopteris* based on *Osmunda spicant* L., which many years later was placed in *Lomaria*, tho many still refer it to *Blechnum*. The genus was well described, giving full synonymy, and was accepted by many subsequent writers like Haller, Wiggers, Weiss and others, until Willdenow usurped the name for a different plant and established *Lomaria* in its place. There is every reason why a restoration should be made. The specific combination apparently first appeared in Scopoli's second edition.

1764

Gleditsch (Syst. Pl.) established the genera *Cincinnatiis* (290) and *Pyxidaria* (291), neither of which is based on any species and must therefore be relegated to the domain of nonentities. The former is usually referred to *Pteris*, altho it was characterized as having "Invol. nullum," and the latter is evidently a direct synonym of *Trichomanes*.

1763

Adanson (Famille des Plantes, 2: 20, 21) recognized twelve genera of ferns of which the following were new: 1. *Thelypteris*, citing "Filix-foemina Fuchs, 596" and "*Pteris* Lin.," among other references, but characterized as having "membrane que borde comme une ligne tout le contour de chaque division des feuilles," and thus being a clear equivalent of *Pteris*!; 2. *Scolopendrium*, clearly based on *Lingua-cervina* Tourn.;* 3. *Ceterac*, based on *Asplenium* of Tournefort which was the common ceterach of Europe; 4. *Filix*, based on *Filix baccifera* Cornut, 5, which is unmistakably our *Cystopteris bulbifera* which Cornut figured in 1635, and which Linnaeus correctly quoted under *Polypodium bulbiferum*; 5. *Dryopteris*, based on *Filix-mas* of Fuchs and Tournefort, pl. 311, 312; 6. *Angiopteris*, adopted from Mitch. Gen. 29, and exactly synonymous with *Onoclea* L.

1782

Berg[ius] (Acta Acad. Sci. Imp. Petrop. 6: 248. pl. 7, f. 1-3) established the genus *Caenopteris* based on *Caenopteris furcata* from Bourbon, *C. rutaefolia* from Cape Colony and *C. vivipara* (*Acrostichum viviparum* L.) also from Bourbon. These species have usually been relegated to *Asplenium* (§ *Darea*).

1783

Lamarck (Encyclop. method. Botanique) commenced his treatment of the ferns which continued until 1808 when the work was completed by Poiret. They accepted only the twelve original Linnaean genera, but added considerably to the number of ferns, their enumeration reaching 444 species. (Cf. footnote under 1806, Swartz.)

1786

Thouin, according to Pfeiffer, established the genus *Celanthera* "Act. Ac. Paris (?)" ; this genus Pfeiffer refers to *Marattia* Swz., which if a true citation it antedates by two years. We have been unable to locate the original of this citation.

* Nearly every writer of the present century has wrongly attributed this name to Smith 1793; it is high time that its original source be publicly noted.

1788

L'Heritier (*Sertum Anglicum*, 30, 31) established the genus *Dicksonia* based on *D. arborescens* from St. Helena and *D. culcita* of Madeira. This in later times has been widely extended to include plants of the greatest diversity of structure and habit and from it certain genera have justly been separated.

1788

Swartz (*Nova Genera et Species Pl.* 128) established the genus *Marattia* based on *M. alata* of the West Indies. The genus is usually credited to Smith, 1793. The above date prevents the genus from yielding to *Myriotheca* Comm. 1789, which is probably the same altho it was founded with no type species as a voucher.

1789

Jussieu (*Genera Plantarum*) established the genus *Darea* mentioning no type, and quoted *Myriotheca* Comm. also with no type, in addition to the twelve original Linnaean genera. In the second edition (1791) the same genera are repeated, but in a footnote is a question if *Caenopteris* Berg. is not the same as *Myriotheca* Comm. Later writers have usually referred *Darea* and *Caenopteris* to *Asplenium*, possibly without the best of reasons.

1790

Necker (*Elementa Botanica*, 3 :) added the genera *Achomanes* (313), *Gleichenia* (314), *Psidopodium* (315), *Onopteris* (316), and *Octosis* (318). None of these are based on types and no earlier references are cited. Pfeiffer regards *Psidopodium* as the equivalent of *Aspidium*, and *Onopteris* of *Asplenium*, and Moore holds the same opinion regarding the latter. *Octosis* and *Gleichenia*, Pfeiffer regards as doubtful, but Moore places the latter as a synonym of *Aspidium*. *Achomanes* was later taken up by Presl for a subgenus of Hymenophyllaceae but is commonly regarded as a synonym of *Trichomanes*. Since these genera are neither represented by types nor can be recognized with certainty, it is best to regard them for what they are worth—nonentities—in other words to disregard them as mere names with no bearing on the question of priority.

1791

Schreber (Gen. Pl. 757) established the genus *Meniscium* founded on *Polypodium reticulatum* L.

1792

Richard (Ann. Soc. Hist. Nat. Paris, 114) proposed the genus *Lophidium* based on *L. latifolium* from Guiana. This is therefore the earliest name for a member of the genus *Schizaea* as limited by Hooker, and this portion of the genus may well be separated generically.

1793

Sir J. E. Smith (Mem. Acad. Roy. Sci. Turin, 5:) established genera: 1. *Woodwardia* (411) based on four species, *W. angustifolia* (*Acrostichum areolatum* L.), *W. Japonica*, *W. Virginica* and *W. radicans*. 2. *Vittaria* (413) based on *Pteris lineata* L. 3. *Davallia* (414) based on eight species of which *D. Canariensis* (*Trichomanes Canariensis* L.) is first named. 4. *Cyathea* (416) based on six species of which *C. horrida* (*Polypodium horridum* L.) and *C. multiflora* are first named, with *C. arborea* and *C. Capensis*, followed by such species as *C. fragilis* and *C. montana*. To show the liberties taken with generic types, as well as Smith's hazy conception of affinities, the first two named are now to be looked for under *Hemitelia* and the last two under *Filix* (*Cystopteris*); or in other words a delicate polypodiaceous fern united generically with a group of tree ferns of a wholly distinct family alliance. 5. *Hymenophyllum* (418) based on *Trichomanes Tunbridgense* L. and *T. asplenoides* Swz. together with six others. 6. *Schizaea* (419) based on *Acrostichum pectinatum* L., *A. dichotomum* L. and *A. elegans* Vahl. 7. *Gleichenia* (419) based on *Onoclea polypodioides* L. and 8. *Danaea* (420) based on *Asplenium nodosum* L. and *D. alata*. *Lindsaea* Dryander must also be considered as published here (413) with *Adiantum Guianense* Aubl. as a type since Dryander's paper, altho read 1794 did not appear until 1796. Smith is usually credited with the genus *Scolopendrium* but that, as we have seen, was used long before by Adanson. He is frequently credited also with *Marattia* which originated with Swartz five years earlier.

1793

G. F. Hoffman (Comm. Soc. Reg. Sci. Gött. 12: 29. *pl.* 5) established the genus *Angiopteris* with a single species based on *Polypodium erectum* Forst. Since the existence of *Angiopteris* Adans. 1763 (adopted from Mitchell) makes this a homonym, the strict application of the Rochester code would necessitate the selection of a new name for this long established and well-known genus. Since *Angiopteris* Adans. is based on *Onoclea sensibilis* and that is the sole species of *Onoclea* L. as published, *Angiopteris* Adans. is absolutely a dead name, with no possibility of resurrection, so long as 1753 remains a starting-point. Only a quibble over a technicality more worthy a pettifogger than a botanist would needlessly displace the name well established by Hoffman.

1796

Dryander published a paper: On *Lindsaea*, a new Genus of Ferns (Linn. Trans. 3:). The preliminary diagnosis of the genus had already been outlined by Smith (see above, 1793), whence the genus must date, but in this paper Dryander gives more detail together with five plates illustrating the species; nine species are included, commencing with the simple leaved *L. sagittata*, *L. Guianensis* forming the seventh. The paper was read November 4, 1794, and the addition containing the ninth species is dated April 23, 1796, evidently added just before printing. The volume bears the date noted above, which constitutes publication according to modern ideas.

1799

Bernhardi (Schrader's Journ. 1: 297) established the genus *Gymnopteris* based on *Acrostichum rufum* (*Pteris rufa* L. Sp. Pl. 1074. 1753) a name which has been unfortunately replaced by *Gymnogramma*. He further characterized twenty genera besides *Lindsaea* and *Schizaea* which he had not seen. *Pteris*, *Blechnum*, *Woodwardia* and *Darea* were merged with *Asplenium* while *Ceterac* was united with *Vittaria*. As he quotes *Polystichum* Roth, the work in which that genus was published (or at least a part of it) must have appeared at an earlier date than is usually attributed to it, or than appears on its title page.

1800

Roth (Tent. Fl. Germ. 3:) published (1) *Athyrium* (58) based on seven species,* viz., *A. fontanum*, *A. Halleri*, *A. molle*, *A. trifidum*, *A. ovatum*, *A. filix-foemina*, and *A. rhaeticum*; and (2) *Polystichum* (69) based on twelve species, viz., *P. Lonchitis*, *P. Phegopteris*, *P. montanum*, *P. Thelypteris*, *P. aculeatum*, *P. Dryopteris*, *P. filix-mas*, *P. cristatum*, *P. frigosum*, *P. multiflorum*, *P. spinosum*, and *P. Marantae*. Moore cites for these genera the date 1788 which is the date of the first volume instead of the third, and Pfeiffer cites the date as 1797. The date on the title page is as above, but as the genera were quoted by Bernhardt in 1799 a part at least of the third volume probably appeared some time before the title page; the preface is dated 14 Sept. 1798. The exact date of issue is still a desideratum.

1800

Hedwig (Filicum Gen. et Sp. fasc. 2) proposed the name *Ptychomanes* in place of Smith's *Hymenophyllum* in order to have the genera of the family close with a uniform termination! *Trichomanes asplenoides* Swz. served as the basis for this establishment.

1801

Swartz in his Genera et Species Filicum (Schrader's Journ. 1800²;) first elaborated his system. He established:

1. *Grammitis* (17) based on *G. linearis*, *G. marginella*, *G. lanceolata*, *G. serrulata*, *G. graminoides* and *G. myosuroides*.
2. *Aspidium* (29) based on *A. articulatum*, *A. pistillare*, *A. trifoliatum*, *A. Lonchitis*, and some sixty other species among them species now included in *Asplenium* (*A. filix-foemina*), *Filix*, and *Phegopteris*.
3. *Diplazium* (61) based on *D. plantagineum* (*Asplenium plantagineum* L.) and *D. grandifolium*.
4. *Lygodium* (106) based on *L. scandens* (*Ophioglossum scandens* L.) *L. flexuosum*, *L. pedatum* and *L. Japonicum*.
5. *Botrychium* (110) based on *B. Lunaria*, *B. rutaceum*, *B. Virginianum*, *B. ternatum*) and *B. zeylandicum*.

* Later in the same year Roth (Cat. Bot. 2: 143) gives *Polypodium bulbiferum* L. as the first species of *Athyrium*.

1801

Bernhardi in a paper published in the pages immediately following that of Swartz (Schrader's Journ. 1800²;) recognized twenty-nine genera among which the following new ones were proposed: 1. *Sphaeropteris** (122) based on *Polypodium medullare* Forst. from New Zealand; 2. *Wibelia* (122) based on *Trichomanes multifidum* Forst. (*Hymenophyllum multifidum* Swz.) from the Pacific Isles; 3. *Struthopteris* (126) based on *Osmunda regalis* and the equivalent of the genus *Osmunda* in its modern sense; 4. *Odonopteris* (127) based on *Ophioglossum scandens* L. (*Lygodium* Swz.); 5. *Ripidium* (127) based on *Acrostichum dichotomum* Forst. (*Schizaea dichotoma* Swz.) from the East Indies; 6. *Gisopteris* (129) based on *Hydroglossum palmatum* Willd. (our own *Lygodium palmatum*); besides two genera of lycopods. He quotes *Todea* and *Hydroglossum* from Willd. (see below under 1802) and it becomes a question for the casuists whether this constitutes publication. It will be noted that Bernhardi arrived independently at the same conclusions as Swartz in several cases and his results only lack priority of place; it is also curious to note how Swartz in his later publications systematically sets aside the work of Bernhardi; later investigators have regarded Swartz's conclusions as unjust, and several of the genera of Bernhardi are now being regarded in their true light.

1801

Cavanilles (Icon. et Descr. Pl. 73)† published *Ugena* based on *U. semihastata*, *U. dichotoma*, *U. macrostachya*, *U. polymorpha*, and *U. microphylla*, thus forming another generic name for *Lygodium*. Later on Cavanilles and likewise Swartz‡ quote this paper as published in October 1801.

1801

Cavanilles (Description de las Plantas §) established the genera:
1. *Tectaria* (249) based on *Polypodium phymatodes*, *P. trifoliatum*,

* This has nothing to do with *Sphaeropteris* Wall. recognized in Synopsis Filicum as a valid genus.

† Anal. de Cienc. 6:

‡ Synopsis Filicum, 152. 1806.

§ Swartz quotes this portion of the work under the citation "Prael." with the date 1801. As it cites (p. 282) the generic name *Ugena*, which, according to both Swartz and Cavanilles himself, appeared in October, 1801, this portion of the work must have

P. filix-mas, *P. filix-foemina* and other species described as new from Spanish colonies; 2. *Oleandra* (252) based on a single species, *O. nerüiformis*; and 3. *Humata* (272) based on three species described by Cavanilles from the Marian Isles, viz. *H. ophioglossa*, *H. pinnatifida* and *H. trifoliata*.

1802

Bernhardi (Schrader's Journ. 1801¹: 22) founded the genus *Calyptridium* based on *Onoclea sensibilis* L.

1802

Cavanilles (Generos y especies de plantas demonstradas en las lecciones publicas del año de 1802*) established two additional genera: *Clementea* (553) based on a single species from the Marian Isles, which is evidently the exact synonym of *Angiopteris evecta*; and *Aphyllocalpa* (556) based on *Osmunda regalis*, the genus *Osmunda* being reserved for *O. Lunaria* and other species of *Botrychium*, as had been done by Bernhardi a year earlier. In his summary at the close of the work he recognizes twenty-eight genera of ferns.

1802

Willdenow (Act. Acad. Erford. 14 †) established the genera *Todea*, based on *Acrostichum barbarum* L., and *Hydroglossum*, based on *Ophioglossum scandens* L. and seven other species.

1802

Mirbel established the genus *Ramondia* based on *R. flexuosa* and *R. scandens*. The only reference to this publication we have

appeared late in the year 1801, if, indeed, it was not issued early in 1802, the date cited by Moore for these genera. Pp. 285-625 evidently appeared later in 1802. The "Prologo" dated 1 March, 1802, and the "Principios elementales de Botanica" (pp. vii-cxxxvi) may have appeared between the other two, or possibly earlier than both. In the two copies we have seen, viz., those at the libraries of Columbia University and Kew Herbarium, the title page is dated 1827, but this evidently has nothing to do with the text of the book itself, and, according to Pritzel, belongs merely to the reprint edition of the work. The full title of the work is "Description de las plantas que D. Antonio Josef Cavanilles demonstro en las lecciones publicas del año 1801 precedida de las principios elementales de la botanica."

* Forming a part (pp. 285-625) of the book mentioned in the last footnote in the two copies we have seen.

† This paper was read 3d Feb. 1801. It was published as a separate together with a paper by Bernhardi under the title: "Ueber einige seltene Farrenkräuter und über Asplenium und einige ihm verwandte Gattungen. Mit 4 Kupfertafeln. Erfurt, 1802."

been able to discover is a note on a "Memoire sur Ramondia, nouveau genre de fougère par le C. Mirbel," signed "DC." in Bull. de Sciences par la Soc. Philomatique de Paris 2: 179, "an 9" no. 47. This publication would be sufficient for the genus, which is only another synonym of *Lygodium*.

1803

Richard (in Michaux: Fl. Bor. Am. 2:) established the genera: *Nephrodium* (266)* based on *N. acrostichoides*, *N. thelypteroides*, *N. marginale*, *N. punctilobulum*, *N. bulbiferum*, *N. filix-foemina*, *N. asplenioides*, *N. cristatum*, *N. tenue*, *N. rufidulum*, *N. lanosum* and *N. Dryopteris*: *Botrypus* (274)† based on *B. Virginicus* and *B. lunarioides*; and *Cteisium* (275) based on *C. paniculatum* (*Lygodium palmatum*). He also established a sub-genus *Hypopeltis* (266) without naming a type.

1803

Mirbel (Hist. Nat. Veg. 5: [ed. Deterv.]) established the genera *Candollea* (86) based on four species of which *C. heterophylla* (*Acrostichum heterophyllum* L.) is first named; *Pyrrhozia* (91) based on *P. Chinensis* Mirbel; *Riedlea* (71) based on *R. sensibilis* (*Onoclea*); and *Belvisia* (111) based on five species of which *Acrostichum spicatum* L. is first mentioned.

1804

Willdenow (Act. Holm. 165) established the genus *Mertensia* based on five species of which *M. furcata* from Jamaica is first named. Since this group is distinct from *Gleichenia* it is unfortunate that this generic name is preoccupied, there being a previous *Mertensia* (Roth, 1797) in the Borraginaceae.

1804

Bory (Voy. 1: 282, note 2) published *Callipteris* based on *Asplenium proliferum* Encyc. Dict. with the statement: "Cette plant doit former avec quelques autres un genre nouveau," but in his enumeration he gives four species in the following order: 1. *C. castaneifolia*, 2. *C. sylvatica*, 3. *C. prolifera*, 4. *C. arborescens*.

* It will here be seen how utterly illogical it has been to apply this name to a group of ferns with united veins.

† Richard quotes "Hort. Med. Paris. Cat." which I have not seen. An MS?

This is a case where a proper exception may be made to the rule of accepting the first name cited under the genus as the type, since a definite type was previously mentioned by the author of the genus in the description.

1804

Sprengel (*Anleitung*, 3:) described several species in various previously established genera of which he recognized thirty-two, but established no new ones.

1806

Bernhardi (*Schrader's Neues Journ.* 1²:) published the following genera: 1. *Cystopteris* (26) based on *Aspidium fragile*, *A. montanum*, and *A. bulbiferum*; 2. *Hypolepis* (34) based on *Lonchitis tenuifolia* Forst.; 3. *Allosorus* (36) based on "Alle *Adianta spuria* Sw.;"* *Dicranopteris* (38) based on *Polypodium dichotomum*; and 4. *Ornithopteris* (40)† founded on certain *Osmundae* "welch einen gyrus spurius besetzen," of which *O. hirsuta* and *O. adiantifolia* are mentioned.

1806

Swartz published his *Synopsis Filicum* which was the first completed systematic review of the ferns of the world.‡ Swartz'

* The "Adianta spuria" of Swartz (*Schrader's Journ.* 1801) are *A. viride* (*Pteris viridis* Forsk.), *A. microphyllum* (Plumier. *pl.* 58), *A. fragrans* (*Polypodium fragrans* L. mant.), *A. caffrorum* L., *A. parvilobum* Swz., *A. Capense* Thumb., *A. pteroides* L., *A. tenuifolium* (*Pteris humilis* Forst.) and *A. multifidum* Swz., all of which except *A. caffrorum* form members of the genus *Cheilanthes* published the same year. It is very evident that Bernhardi's paper appeared in the interval between the printing of the genus *Cheilanthes* in Swartz' *Synop. Fil.* (p. 126) and the printing of the index (p. 425), which says "*Allosorus* Bernh. est *Cheilanthes*." In so close and complicated a case as this it would seem reasonable to let the genus *Cheilanthes* stand, especially since *Pteris viridis* Forsk., the first named species under *Allosorus*, is not a *Cheilanthes*. For the same reason *Allosorus* must hold for a good genus. How Moore and others could transfer this name to *Cryptogramma crispa* and *Pellaea Stelleri*, species never included in this genus by Bernhardi, is one of the many anomalies into which a lack of system in systematic work has brought us.

† This is also disposed of in the index of Swartz' *Synopsis Filicum* as "*Ornithopteris* Bernh. est *Anemia*." It would seem that this antedates *Anemia* and may stand, particularly as its type is in a different section of the composite genus which has hitherto been divided perhaps with good reason.

‡ Poiret did not complete his account of the ferns which was commenced by Lamarck in 1783 in the *Encyclopedie Methodique* until 1808. He described only 444 species; Swartz described 716 species besides citing many not yet identified, together with 68 Lycopodiaceae.

personal work was based on collections in Jamaica, etc., which had been described by him either in the *Prodromus* (1788) or his *Flora Indiae Occidentalis* (1806). The work was edited and annotated by Weber and Mohr. Swartz recognized 38 genera besides three of the Lycopodiaceae of which the following were new: 1. *Taenitis* Willd. (24) founded on *Pteris blechnoides* Willd. 2. *Cheilanthes* (126) based on sixteen species of which *C. micropteris* is first named. 3. *Anemia* (155) based on seventeen species of which *Osmunda phyllitidis* L. is first named. 4. *Mohria* (159) based on *Adiantum Caffrorum* L. which is rebaptized as *Mohria thurifraga*; and 5. *Psilotum* (187) based on *Lycopodium nudum* L. which is rebaptized as *P. triquetrum*.

1809

Willdenow (*Berliner Mag.* 160) founded the genus *Struthiopteris** based on *Osmunda Struthiopteris* L. "und eine neue noch nicht beschriebene aus Pennsylvanien;" and the genus *Lomaria* based on "Alle von Swartz angeführte Arten, ausser den bereits davon eben getrennten werden, nur dessen *Onoclea Sorbifolium* ist ein wahres *Acrostichum*." As the reference is to Swartz' *Synopsis Filicum*, *Lomaria* must stand for *O. spicata*, *O. nodulosa* Mx., *O. discolor*, *O. Capensis*, *O. lineata*, *O. Boryana*, *O. attenuata* and *O. scandens*, as the residue in the order named by Swartz.

1809

Schkuhr (*Crypt. Gewächse*, 82) published the genus *Monogramma* Commerson, based on *M. graminea* from Bourbon and figured on *pl.* 87 under "*Cenopteris?*"

1810

R. Brown (*Prodr. Fl. Nov. Holl.* 1:) established the following genera: 1. *Notholaena* † (145) based on five species of which *N. distans* is first mentioned; a "genus cujus lupus *Poly. umbrosum*

* This is the third time this generic name was used, *Cf.* 1760, Scopoli, and 1801, Bernhardt above.

† The orthography, *Nothochlaena* has been followed by many but Robert Brown wrote the name as above. It is passing strange that with the copy of the *Prodromus* in hand, Mr. Baker could say of *Nothochlaena* "The above is the original spelling of the name as given by R. Brown." *Cf.* *Annals Bot.* 5: 480 (*New Ferns*, 98),

Hort. Kew, alias sp. ineditas continet." 2. *Allantodia** (149) based on *A. australis* and *A. tenera*. 3. *Doodia* (151) based on *D. aspera*, *D. media* and *D. caudata*. 4. *Stegania* (152) based on eight species of which *S. Patersoni* is first named; the species are included under *Lomaria* by Baker. 5. *Alsophila* (158) based on *A. australis*. 6. *Platyzoma* (160) based on *P. microphyllum*. In a footnote under *Alsophila*, *Hemitelia* (158) is proposed for *Cyathea multiflora* Swz., *C. horrida* and *C. Capensis*, and in a second footnote for *Polypodium Ilvense* and *P. hyperborea*, *Woodia* (sic) is proposed.

1810

Humboldt and Bonpland (see 1810 under Willdenow).

1810

Willdenow published the fourth edition of *Systema Plantarum* of which Vol. 5 contains the ferns in which 43 genera and 1008 species are recognized; the new genera are: 1. *Ceterach* (136) based on three species of which *C. officinarum* is first named, a changed form of the name of a genus, long before adopted from Tournefort by Adanson; 2. *Pleopeltis* H. & B. (211), based on *P. angusta*; and 3. *Polybotra* H. & B. (99) based on *P. osmundacea*.

1811

Desvaux (Berliner Mag. 5:) established the following genera:

1. *Didymochlaena* (393) based on *D. sinuosa* Desv. from India orientalis.

2. *Gymnogramma* (304) based on *G. rufa* (*Pteris rufa*) from Jamaica and twelve other species.

3. *Cincinnatiis* (311) based on *C. ferruginea* Desv. of the Antilles and eleven others.

4. *Cyclophorus* (300) based on *C. adnascens* (*Poly. adnascens* Swz.) and five others.

These were repeated in the Jour. de Bot. 1813.

* The inconsistencies of English systematists are forcibly illustrated here; this genus of two species has been returned to *Asplenium* while the generic name has been transferred to *A. Brunoniana*, and the genus ascribed to Wallich! Cf. Synopsis Filicum 246, and Moore's Index Filicum, 42.

1811

Aub. du Petit Thours (Melanges de Botanique, 1 :) founded the genus *Scyphofilix* with no type mentioned, but described as follows: "Involucrum calicinum cupuliforme, continens plurimas capsulas annulatas, disco folii inferiore adnatum frons decompositas. An *Davallia* Smith?;" and *Vallifilix* based on *Ophioglossum scandens*. The author considers it necessary to establish this last genus as new, altho he quotes *Lygodium* Swz., *Ugena* Cav., *Odontopteris* Bernh., *Ramondia* Mirbel, and *Hydroglossum* Willd. as synonyms most of which were founded on exactly the same type! If ever a genus was overburdened with synonyms it is the genus *Lygodium*; almost every writer on ferns in the first decade of this century gave it a new name.

1813

R. Brown (Trans. Linn. Soc. 11: 173) republished* the genus *Woodsia* based on *W. Ilvensis* and *W. hyperborea*, the latter needlessly coined by Swartz, as both he and R. Brown cite *Acrostichum alpinum* Bolton as the original name.

1816

Lagasca (Gen. et Sp. Pl. 33) established the genus *Llavea* based on *L. cordifolia* from Nova Hispania.

1819

Raddi (Op. Sc. di Bol. 3:) founded the genera *Olfersia* (283, pl. 6) based on *O. corcovadensis* from Brazil and *Rumhora*† (290, pl. 12. f.) founded on *R. aspidioides* from Brazil.

1820

Kaulfuss (Berl. Jahrb. Pharm.‡) established the following genera: 1. *Xiphopteris* (35) based on *Grammitis serrulata* and *G. myosuroides* from Jamaica; 2. *Cochlidium* (36) based on *Grammitis graminoides* Swz. from Jamaica; 3. *Onychium* (45) founded on "nur eine Art vom Vorgeberge der guten Hoffnung"; since

* Prodr. Fl. Nov. Hall. 1: 158, note. 1810.

† Evidently a misprint for *Rumohra* as it was named for C. de Rumohr.

‡ The only file of this curious journal which we have been able to find is in the library of the Surgeon General's office at Washington.

no type is mentioned this genus must be cited from 1824; 4. *Saccoloma* (51) based on *S. elegans* from Brazil; and 5. *Cibotium* (53) based on *C. Chamissoi* from the "Südsee."

1821

Brongniart (Bull. Soc. Phil.) founded the genus *Ceratopteris* (186) with two species (1) *Ceratopteris thalictroides* founded on *Pteris thalictroides* Sw. ((a) *Acrostichum siliquosum* and (b) *A. thalictroides* L.) and (2) *Ceratopteris Gaudichaudii* from the Marian Is.

1821

S. F. Gray (Nat. Arr. Brit. Plants, 2: 9) founded the genus *Cyclopteris* based on *C. fragilis* (= *Filix*).

1822

Presl (Deliciae Pragenses) establishes the genus *Trichipteris* (172) on *T. excelsa* from Brazil. Later he changed the name to *Trichopteris*.

1823

R. Brown (App. Franklin's Journ. 767) established the genus *Cryptogramma* based on *C. acrostichoides*; and *Teleozoma* based on *Pteris thalictroides* Swz. which he had recognized as a good genus thirteen years before but unfortunately had suggested no name.

1824

Kaulfuss (Enumeratio Filicum) published the results of Chamisso's journeys and established the following genera of ferns: 1. *Helmithostachys* (28) founded on *H. dulcis* (*Osmunda Zeylanica* L.); 2. *Chnoophora* (123) based on *C. Humboldtii* Kaulf. (*Cyathea villosa* H. & B.); 3. *Niphobolus* (124) substituted for *Cyclophorus* Desv., because the latter was preoccupied in conchology, based on *N. adnascens* (*Polypodium adnascens*) and six other species; 4. *Hymenolepis* (146) based on *H. ophioglossoides* (*Acrostichum spicatum*); 5. *Leptochilus* (147) based on *L. axillaris*; 6. *Ellobocarpus* (147) based on *E. oleraceus* (*Ceratopteris*); 7. *Sadleria* (161) based on *S. cyatheoides* Kaulf. from the Hawaiian Islands. 8. *Antrophyum* (197) based on *A. pumilum* (*Hemionitis immersa* Willd.), *A. plantagineum* (*Hemionitis plantagineum* Cav.), and three others; 9. *Cas-*

sebeera (215) based on *Adiantum triphyllum* and *C. pinnata* Kaulf.; 10. *Balantium* (228) based on *B. auricomum* and *Dicksonia Culcita*. Besides the above, *Onychium* (144) must be reckoned from this date since it was not fully established by its author in 1820. (*O. auratum* and *O. Capense* are here described.)

1824

Gaudichaud (Ann. Sci. Nat. 3:) established *Pinonia* (507) based on *P. splendens* from the Sandwich Islands; *Schizoloma* (507) based on *S. cordatum* from the Moluccas and two other species, and *Adenophorus* (508) based on *A. tripinnatifida* from the Sandwich Islands and two other species.

1824

Bory (Dict. Class. Hist. Nat. 6-9:) founded the genera:

1. *Feea* (6: 446, 588. 1824) based on *F. polypodina* and *F. nana*.
2. *Hymenostachys* (6: 588. 1824; 8: 462. 1825) based on *H. diversifrons*.
3. *Lastrea* (6: 588. 1824; 9: 232. 1826) based on *Polypodium Oreopteris*, *Thelypteris*, *Fhegopteris*, and *Dryopteris* of Europe together with other species.
4. *Selliguea* (6: 587. 1824; 15: 344. 1829) based on a Javan species described but not named.
5. *Marginaria* (*Adenophorus* Gaud.) (6: 587. 1824; 10: 176. 1826) based on *M. scolopendria*, *Poly. marginatum* Willd., *P. incanum* and two others.

1825

Bory (Ann. Sci. Nat. 5: 464) established *Drynaria* as a subgenus based on *Polypodium quercifolium* L. and three other species.

1825

Hamilton (in Don: Prod. Fl. Nep.) published:

1. *Neuronia* (6) based on *Aspidium Wallichii* Hook. Exot. Fl. pl. 5, changed to *N. asplenoides* (7).
2. *Peranema* (12) founded on *P. cyatheoides*.
3. *Leptostegia* (14) on *L. lucida*.

1825

Hooker (Exotic Flora 2: 147) established the genus *Parkeria* based on *P. pteridoides* from Guiana, apparently in ignorance of the genus *Ceratopteris* established four years previously, and *Teleozoma* in which Robert Brown had antedated him by two years.

1825

Reinwardt (Syll. Pl. Regensb.*) published:

Onychium (2) based on *O. carnosum*.

Dipteris (3) based on *D. conjugata*.

Ophiopteris (3) based on *O. verticillata*.

Tegularia (3) is proposed by Hornschuch as a substitute for *Ceramium* Reinw. based on *T. adiantifolia* (*Aspidium truncatulum* Swz., Willd.).

Ceramium (3) preoccupied (= *Tegularia* Hornsch.).

1826

Gaudichaud (Freycinet's Voy.) published:

1. *Alcicornium* (307) based on *A. vulgare*.

2. *Monochlaena* (340) based on *M. sinuosa* a needless synonym for *Didymochlaena*. "*Hippodium* Gaud. MS." is also published as an additional synonym.

Adenophorus, *Pinonia* and *Schizoloma* are further characterized altho they were originally published two years earlier.

1827

Eschweiler (Linnaea 2: 117) established the genus *Poikilopteris* on *Acrostichum scandens* Raddi, the form of which was changed to *Poecilopteris* later by Presl and others.

1827

Desvaux (Ann. Soc. Linn. Paris, 6:) published a long account of the known ferns † with many new species and the following new genera:

* Often quoted as Syll. Ratisbon, and published in the Bot. Zeitung (Flora) as one of the early miscellaneous papers of that serial.

† We have recently received a copy of this paper in the original covers, which bears the title *Prodrome de la famille des Fougères*; pp. 171-212 bear the date "Ma 1827" and pp. 213-337 bear the date "Juillet 1827." The text calls for plates 7-11 but only 7 and 8 are present, as is also the case with the copy in the Kew Herbarium, the only other copy seen.

1. *Ophiala* (195) based on *O. Zeylanica* (*Osmunda Zeylanica* L.).
2. *Platycerium* (213) based on *P. alcicorne* and three other species.
3. *Micropteris* (217) based on *M. blechnoides* (*Blechnum seminudum* Willd.), *M. serrulata*, *M. orientalis* Desv. and *M. pectinata* Desv.
4. *Polytaenium* (218) based on *P. lanceolatum* (*Hemionitis lineata* Swz.).
5. *Pteropsis* (218) based on *P. nummularia* (*Acrostichum heterophyllum* L.) and nine other species.
6. *Sitobolium* (263) based on *S. punctilobum* (*Nephrodium punctilobum* Michx.).
7. *Phorolobus* (291) based on *P. crispus* (*Osmunda crispa* L.) and four other species.
8. *Furcaria* (292) based on *F. thalictroides* (*Acrostichum thalictroides* L.) and *F. cornuta* (*Pteris cornuta* Beauv.).
9. *Neuropteris* (292) based on *N. elegans* Desv. from British Guiana.
10. *Didymoglossum* (330) based on *Trichomanes muscoides* and seven others.
11. *Amphoradenium* (335) substituted for *Adenophorus* Gaud. and based on *A. Gaudichaudii* (*Adenophorus tripinnatifida* Gaud.).

1828

Blume (Enum. Pl. Jav. 2:)* established the following genera: 1. *Lecanopteris* (120) based on *L. carnosa* from the Moluccas; 2. *Stenogramma* (172) based on *S. aspidioides*; 3. *Arachnoides* (241) based on *A. aspidioides*; 4. *Diacalpe* (241) based on *D. aspidioides*; 5. *Gymnosphaera* (242) based on *G. glabra* and *G. squamulata*; 6. *Kaulfussia* (260) based on *K. aesculifolia*. *Paragramma* (119) and *Diagramma* (118) were also published as subgenera of *Grammitis*.

1828

Hocker and Greville (Icones Filicum, pl. 154) established the genus *Deparia* based on *Deparia Macraei* from Owhyhee (Hawaii).

* A revised edition was issued in 1830 apparently with the same pagination.

1828

J. E. Smith (Engl. Flora, 4: 258) established the genus *Cystea* founded on *C. fragilis* and three other British species, and thus introduced the practice of arbitrarily discarding a name already established, "a retrenching of the genus *Cystopteris* Bernhardtii as compounded of another already established, *Pteris*, neither the genus or [*sic*] its name having ever been received, such a necessary correction can cause no inconvenience." It is a sufficient condemnation of this egotistic assumption to note that the name *Cystea* has received the merited oblivion it deserves and only its mummy remains in synonymy to remind us that justice in nomenclature is sometime sure to come!

1828

Wallich (*vide* Sprengel: Gen. Pl. 724) established *Arthrobotrys* as a subgenus of *Aspidium* based on *A. Thelypteris* and several other species. Pfeiffer dates the genus 1831. In his catalogue (1832) he established *Actinostachys* based on *Schizaea digitata*.

1828

Blume (Fl. Javae, 2:*) established *Pleurogramme* (69), based on *Taenitis linearis* Kaulf., *T. pinnata* Kaulf. and *T. graminifolia* Hook.; *Cheilogramme* (70), based on *T. lanceolata* Kaulf., *T. angustifolia* Spreng., *T. furcata* Willd., and *T. tricuspidata* Spreng.; *Loxogramme* (73), as a subgenus of *Grammitis* based on *G. lanceolata* Swz., *G. coriacea* (Kf.) Spreng., *G. avenia* Blume, and *G. involuta* Don. Under *Polypodium* he also establishes the § *Goniophlebium* (132), based on *P. cuspidatum*, *P. subauriculatum* and ? *P. pallens*; and § *Ctenopteris* (132) based on seven species of which *P. Celebicum* is first named.

1829

Kaulfuss (Flora, 12¹: 341) established the genus *Physematium* based on *P. molle* from Mexico, a genus, perhaps, needlessly separated from *Woodsia*.

* The copy of this folio in the Columbia University bears the double date "1828-36" but the genera are usually assigned to the earlier date whether correctly we cannot say.

1830

R. Brown (in Wallich: *Pl. Asiat. rarior.* 1:) established the genus *Matonia* (16. *pl.* 16) based on *Matonia pectinata*; the name *Hypoderris* is mentioned as follows: "The beautiful ramification of the veins and their union from which the sorus originated in *Matonia* is not altogether peculiar to it. Among those genera of Polypodiaceae having an indusium one remarkable example occurs in a genus as yet undescribed (*Hypoderris*) which with an indusium not materially different from that of *Woodsia* has exactly the habit of *Aspidium trifoliatum*." This is all the basis that exists for assigning the name of Robert Brown and affixing the date 1830 to the genus *Hypoderris*, yet some people who accept this, reject other genera admittedly just as distinct which were elaborately described by their authors, and moreover referred to well-known species as types.

1830

Presl (*Reliquae Haenkeanae*, 1: 76. *pl.* 12. *f.* 1) established the genus *Botryopteris* based on *B. Mexicana*, based, as afterwards stated by the author, on an erroneous label, as the plant figured is a species of the East Indian genus *Helminthostachys*.

1831

Hooker and Greville (*Icones Filicum*, *pl.* 178) established the genus *Jamesonia* based on *J. pulchra* from Peru.

Summary

The genera of ferns proposed prior to 1832 with their type species and synonyms arranged alphabetically are the following:

(Genera with claims to validity are in **bold face**; synonyms are in SMALL CAPITALS; the type of each genus follows the date in *Italics*; dead names are in Roman.)

Achomanes Neck, 1790 (no type).

Acrostichum L., 1753 (*A. aureum*).

Actinostachys Wall., 1832 (*Schizaea digitata*).

ADENOPHORUS Gaud., 1824 = Polypodium.

Adiantum L., 1753 (*A. capillus-Veneris*).

Alcicornium Gaud., 1826 (*A. vulgare*).

PLATYCERIUM Desv., 1827 (*P. alcicorne*).

- ALLANTODIA** R. Br., 1810 = *Athyrium*.
Allosorus Bernh., 1806 (*Pteris viridis* Forsk.).
Alsophila R. Br., 1810 (*A. australis*).
 CHNOOPHORA Kaulf., 1824 (*C. Humboldtii*).
 TRICHIPTERIS Presl, 1822 (*T. excelsa*).
 GYMNOSPHERA Blume, 1828 (*G. glabra*).
AMPHORADENIUM Desv., 1827 = *Polypodium*.
Anemia Swz., 1806 (*Osmunda phyllitidis* L.).
ANGIOPTERIS Adans., 1763 = *Onoclea*.
Angiopteris Hoffm., 1793 (*Polypodium erectum* Forst.).
 CLEMENTEA Cav., 1802.
Antrophyum Kaulf., 1824 (*Hemionitis immersa* Willd.).
APHYLLOCALPA Cav., 1802 = *Osmunda*.
Arachnoides Blume, 1828 (*A. aspidioides*) = *Polystichum* *fide*
 Hooker.
ARTHROBOTRYS Wall., 1828 = *Dryopteris*.
Aspidium Swz., 1800 (*A. articulatum*).
 OLEANDRA Cav., 1802 (*A. neriiformis*).
 NEURONIA Ham., 1825 (*Aspidium Wallichii*).
Asplenium L., 1753 (*A. ceterach*).
 CETERAC Adans., 1763 (*C. officinarum*).
 CETERACH Willd., 1810 (*C. officinarum*).
Athyrium Roth, 1800 (*A. fontanum*).
 ALLANTODIA R. Br., 1810 (*A. australis*).
Balantium Kaulf., 1824 = *B. auricomum*.
Belvisia Mirb., 1803 (*Acrostichum spicatum*).
 LOMARIA Willd., 1809 (*Onoclea spicata*).
 HYMNOLEPIS Kaulf., 1824 (*Acrostichum spicatum*).
Blechnum L., 1753 (*B. orientale*).
Botrychium Swz., 1800 (*B. lunaria*).
 LUNARIA Hill, 1756, not L. 1753.
 BOTRYPUS Richard, 1803 (*B. Virginicus*).
BOTRYOPTERIS Presl, 1830 = *Helminthostachys*.
BOTRYPUS Richard, 1803 = *Botrychium*.
Caenopteris Berg., 1782 (*C. furcata*).
Callipteris Bory., 1804 (*Asplenium proliferum*).
CALYPTERIUM Bernh., 1802 = *Onoclea*.

- Candollea** Mirbel, 1803 (*Acrostichum heterophyllum* L.).
 PTEROPSIS Desv., 1827 (*P. nummularia* = *Acrostichum heterophyllum* L.).
- Cassebeera** Kaulf., 1824 (*Adiantum triphyllum*).
 Celanthera Thouin, 1786 (?? = Marattia).
- CERAMIUM Reinw., 1825 = Didymochlaena.
- Ceratopteris** Brongn., 1821 (*C. thalictroides*).
 TELEOZOMA R.Br., 1823 (*Pteris thalictroides*!).
 ELLOBOCARPUS Kaulf., 1824 (*E. oleraceus* = *Ceratopteris thalictroides*).
- PARKERIA Hook., 1825 (*P. pteridoides*!).
 FURCARIA Desv., 1827 (*Acrostichum thalictroides*).
- CETERAC Adans., 1763 = Asplenium.
 CETERACH Willd., 1810 = Asplenium.
- Cheilanthes** Swz., 1806 (*C. micropteris*).
Cheilogramme Blume, 1828 (*Taenitis lanceolata*).
- CHNOOPHORA Kaulf., 1824 = Alsophila R. Br.
- Cibotium** Kaulf., 1820 (*C. Chamissoi*!).
 PINONIA Gaud., 1824 (*P. splendens*).
- Cincinalis Gled., 1764 (no type).
 CINCINALIS Desv., 1811 = Notholaena R. Br.
- CLEMENTEA Cav., 1802 = Angiopteris Hoffm.
- COCHLIDIUM Kaulf., 1820 = Monogramma.
- Cryptogramma** R. Br., 1823 (*C. acrostichoides*!).
 PHOROLOBUS Desv., 1827 (*Osmunda crispa* L.).
- CTEISIUM Richard, 1803 = Lygodium.
- Ctenopteris Blume, 1828 = § Polypodium.
- Cyathea** J. E. Smith, 1793 (*Polypodium horridum* L.).
- Cyclophorus** Desv., 1811 (*Polypodium adnascens* Swz.).
 NIPHOBOLUS Kaulf., 1824 (*P. adnascens*).
- CYCLOPTERIS S. F. Gray, 1821 = Filix.
- CYSTEA J. E. Smith, 1828 = Filix.
- CYSTOPTERIS Bernh., 1811 = Filix.
- Danaea** J. E. Smith, 1793 (*Asplenium nodosum* L.).
- Darea Juss., 1789 (no type).
- Davallia** J. E. Smith, 1793 (*D. Canariensis*).

Dennstaedtia Bernh., 1800 (*Trichomanes flaccida* Forst.).

SITOBOLIUM Desv., 1827 (*Nephrodium punctilobulum* Michx.).

Deparia Hook. & Grev., 1828 (*D. Macraei*).

Diacalpe Blume, 1828 (*D. aspidioides*).

Diagramma Blume, 1828 = § Grammitis Swz.

Dicksonia L'Her., 1788 (*D. arborescens*).

Dicranophlebia Mart., 1828-1834 = sub-genus *Alsophila*.

Dicranopteris Bernh., 1806 (*Polypodium dichotomum*).

MERTENSIA Willd., 1804 (*M. furcata*).

Didymochlaena Desv., 1811 (*D. sinuosa*).

CERAMIUM Reinw., 1825. Not Wiggers, 1780, nor Agardh, 1817.

TEGULARIA Hornsch., 1825 (*Aspidium truncatulum* Swz.).

MONOCHLAENA Gaud., 1826 (*M. sinuata*).

HIPPODIUM Gaud. MS. 1826 (quoted as synonym of *Monochlaena*).

DIDYMOGLOSSUM Desv., 1827 = *Trichomanes*.

Diplazium Swz., 1800 (*Asplenium plantagineum* L.).

Dipteris Reinw., 1825 (*D. conjugata*).

Doodia R. Br., 1810 (*D. aspera*).

Drynaria Bory., 1825 (*Polypodium quercifolium* L.).

Dryopteris Adans., 1763 (*Polypodium filix-mas*).

LASTREA Bory., 1824 (*Polypodium oreopteris*).

ARTHROBOTRYS Wall., 1828 (*Aspidium Thelypteris*).

ELLOBOCARPUS Kaulf., 1824 = *Ceratopteris*.

Feea Bory., 1824 (*F. polypodina*).

Filix Adans., 1763 (*Polypodium bulbiferum*).

CYSTOPTERIS Bernh., 1806 (*Aspidium fragilis*).

CYCLOPTERIS S. F. Gray, 1821 (*C. fragilis*).

CYSTEIA J. E. Smith, 1828 (*C. fragilis*).

FURCARIA Desv., 1827 = *Ceratopteris*.

GISOPTERIS Bernh., 1800 = *Lygodium*.

Gleichenia Neck., 1790 (no type).

Gleichenia J. E. Smith, 1793 (*Onoclea polypodioides* L.).

Goniophlebium Blume, 1829 = § *Polypodium*.

Grammitis Swz., 1800 (*G. linearis*).

GYMNOGRAMMA Desv., 1811 = *Gymnopteris* Bernh.

Gymnopteris Bernh., 1799 (*Acrostichum rufum* L.).*

GYMNOGRAMMA Desv., 1811 (*Pteris rufa*).

GYMNOSPHERA Blume, 1828 = *Alsophila*.

Haplophlebia Mart., 1828-34 = sub-genus *Alsophila*.

Helminthostachys Kaulf., 1824 (*Osmunda Zeylanica* L.!).

OPHIALA Desv., 1827 (*O. Zeylanica*!).

BOTRYOPTERIS Presl., 1830 (*B. Mexicana*).

Hemionitis L., 1753 (*H. palmata*).

Hemitelia R. Br., 1810 (*Cyathea multiflora* Swz.).

HIPPODIUM Gaud., 1826 = *Didymochlaena*!

Humata Car., 1801 (*H. ophioglossa*).

HYDROGLOSSUM Willd., 1802 = *Lygodium*.

HYMENOLEPIS Kaulf., 1824 = *Belvisia* Mirbel.

Hymenophyllum J. E. Smith, 1793 (*Trichomanes Tunbridgense* L.).

PTYCHOMANES Hedw., 1800 (*Trichomanes asplenoides* Swz.).

WIBELIA Bernh., 1801 (*Trichomanes Tultifidum* Forst.).

Hymenostachys Bory., 1824 (*H. diversifrons*!).

HYMENOTOMIA Gaud., 1826 = *Lindsaea*.

Hypoderris R. Br., ? 1830 (established later than 1831).

Hypolepis Bernh., 1806 (*Lonchitis tenuifolia*).

Hypopeltis Richard, 1803 (no type).

Jamesonia Hook. & Grev., 1831 (*J. pulchra*).

Kaulfussia Blume, 1828 (*K. aesculifolia*).

LASTREA Bory., 1824 = *Dryopteris*.

Lecanopteris Blume, 1828 (*L. carnosa*!).

ONYCHIUM Reinw., 1825 (*O. carnosa*).

* The recent Lieferungen of Engler-Prantl, *Die natürlichen Pflanzenfamilien*, relating to the ferns, have reached us just before the last page proofs of this article were returned to the printer, and while giving us in the main a much more rational classification of the ferns, still contain many interesting muddles which amply illustrate the lack of system among taxonomists who follow a hap-hazard system, or better no system at all in the matter of generic types. A single instance will sufficiently illustrate this point. As noted above *Gymnopteris* Bernh. was based on a single species (*Acrostichum rufum* L.). Now in *Die natürlichen Pflanzenfamilien* "*Gymnopteris* Bernh." appears (pp. 198-202) as a large tropical genus of thirty species, but the only species known to Bernhardt and the one on which he founded the genus does not appear among them! On the contrary, *Acrostichum rufum* L., which stood as the monotype of Bernhardt's *Gymnopteris* in 1799, and headed the list of the dozen species which Desvaux in 1811 marshalled under his new genus *Gymnogramma*, appears in this most recent utterance of the Berlin code under neither of these genera, but with other species under *Neurogramme* (p. 262, f. 139 B), a genus founded by Link in 1844!!! Surely some taxonomists have yet to learn the fundamental principles of stability in nomenclature!

Leptochilus * Kaulf., 1824 (*L. axillaris*!).

Leptostegia Ham., 1825 (*L. lucida*).

Lindsaea Dry.; J. E. Smith, 1793 (*Adiantum Guianense* Aubl.).

HYMENOTOMIA Gaud., 1826 (*Lindsaea microphylla*).

Llavea Lag., 1816 (*L. cordifolia*).

LOMARIA Willd., 1809 = *Belvisia* Mirb.

Lonchitis L., 1753 (*L. aurita*).

Lophidium Richard, 1792 (*L. latifolium*).

RIPIDIUM Bernh., 1801 (*Acrostichum dichotomum*).

LOXOGRAMMA Blume, 1828 = § Grammitis.

Lygodium Swz., 1801 (*Ophioglossum scandens* L.).

ODONTOPTERIS Bernh., 1801 (*O. scandens*).

GISOPTERIS Bernh., 1801 (*Hydroglossum palmatum*).

UGENA Cav., 1801 (*U. semihastata*).

HYDROGLOSSUM Willd., 1802 (*Ophioglossum scandens*).

RAMONDIA Mirbel, 1802 (*R. flexuosa*).

CTESIUM Richard, 1803 (*C. paniculata* = *Lygodium palmatum*).

VALLIFILIX Aub. du Petit Thours, 1811 (*Ophioglossum scandens*).

Marattia Swz., 1788 (*M. alata*!).

MARGINARIA Bory., 1824. = *Polypodium*.

Matonia R. Br., 1830 (*Matonia pectinata*).

Meniscium Schreb., 1791 (*Polypodium reticulatum* L.).

MERTENSIA Willd., 1804 = *Dicranopteris*.

Micropteris Desv., 1827 (*Blechnum seminudum* Willd.).

Mohria Swz., 1806 (*Adiantum Caffrorum* L.!).

MONOCHLAENA Gaud., 1826 = *Didymochlaena*.

Monogramma Commerson, 1809 (*M. graminea*).

COCHLIDIUM Kaulf., 1820 (*Grammitis graminoides*!).

MYRIOTHECA Comm., 1789 (no type). (? = *Marattia*).

NEPHRODIUM Richard, 1803 = *Polystichum*.

NEURONIA Ham., 1825 = *Aspidium*.

NEUROPTERIS Desv., 1827 = *Saccoloma*.

* The status of this genus is uncertain. Mettenius refers it to *Polypodium*, Hooker to *Acrostichum*, while Moore refers it to *Gymnopteris* which name he adopts from Bernhardi without warrant. Its resting place is thus uneasy and it is quite possible that it represents a good genus by itself.

- NIPHOBOLUS Kaulf., 1824 = Cyclophorus.
Notholaena R. Br., 1810 (*N. distans*).
 CINCINALIS Desv., 1811 (*C. ferruginea*).
 ODONTOPTERIS Bernh., 1800 = Lygodium.
 Oetosis Neck., 1790 (no type).
 OLEANDRA Cav., 1802 = Aspidium.
Olfersia Raddi, 1819 (*O. corcovadensis*!).
Onoclea L., 1753 (*O. sensibilis*!).
 ANGIOPTERIS Adans., 1763, not Hoffm.
 CALYPTERIUM Bernh., 1802 (*Onoclea sensibilis*).
 RIEDLEA Mirb., 1803 (*R. sensibilis*).
 Onopteris Neck., 1790 (no type).
 Onychium Kaulf., 1820 (no type).
Onychium Kaulf., 1824 (*O. auratum*).
 ONYCHIUM Reinw., 1825 = Lecanopteris.
 OPHIALA Desv., 1827 = Helminthostachys.
Ophioglossum L., 1753 (*O. vulgatum*).
Ophiopteris Reinw., 1825 (*O. verticillata*); referred by Moore to
 Oleandra.
Ornithopteris Bernh., 1806 (*Osmunda hirsuta*).
Osmunda L., 1753 (*O. regalis*).
 STRUTHOPTERIS Bernh., 1801 (*Osmunda regalis*); not *Stru-*
 thiopteris Scopoli, nor Willd.
 APHYLLOCALPA Cav., 1802 (*Osmunda regalis*).
 Paragramma Blume, 1828 = sect. Grammitis Swz.
 PARKERIA Hook., 1825 = Ceratopteris.
Peranema Hamilton, 1825 (*P. cyatheoides*).
 PHOROLOBUS Desv., 1827 = Cryptogramma.
Phyllitis Ludwig, 1757 (*P. Scolopendrium*).
 SCOLOPENDRIUM Adans., 1763.
 PHYSEMATIUM Kaulf., 1829 = Woodsia.
 PINONIA Gaud., 1824 = Cibotium.
 PLATYCERIUM Desv., 1827 = Alccicornum.
Platyzoma R. Br., 1810 (*P. microphyllum*).
Pleopeltis H. & B., 1810 (*P. angusta*).
Pleurogramma Blume, 1828 (*Taenitis linearis* Kaulf.).
 POECILOPTERIS Presl. = Poikilopteris.
Poikilopteris Esch., 1827 (*Acrostichum scandens* Raddi.)

Polybotra H. & B., 1810 (*P. osmundacea*).

Polypodium L., 1753 (*P. vulgare*).

ADENOPHORUS Gaud., 1824 (*A. triprinnatifida*).

MARGINARIA Bory., 1824 (*M. scolopendria*).

AMPHORADENIUM Desv., 1827 (*A. Gaudichaudii*).

Polystichum Roth, 1800 (*P. Lonchitis*).

NEPHRODIUM Richard., 1803 (*N. acrostichoides*).

RUMOHRA Raddi, 1819 (*R. aspidioides*).

Polytaenium Desv., 1827 (*Hemionitis lineata* Swz.).

Psidopodium Neck., 1790 (no type).

Pteris L., 1753 (*P. arborea*).

THELYPTERIS Adans., 1763 (type indefinite).

PTEROPSIS Desv., 1827 = Candollea Mirb.

PTYCHOMANES Hedw., 1800 = Hymenophyllum.

Pyrrhozia Mirb., 1803 (*P. Chinensis* Mirb.).

Pyxidaria Gled., 1764 (no type) = Trichomanes.

RAMONDIA Mirb., 1801 = Lygodium.

RIEDLEA Mirb., 1803 = Onoclea.

RIPIDIUM Bernh., 1801 = Lophidium.

RUMOHRA Raddi, 1819 = Polystichum.

Saccoloma Kaulf., 1820 (*S. elegans*!).

NEUROPTERIS Desv., 1827 (*N. elegans*).

Sadleria Kaulf., 1824 (*S. cyatheoides*!).

Schizaea J. E. Smith, 1793 (*Acrostichum pectinatum* L.).

Schizoloma Gaud., 1824 (*S. cordatum*).

SCOLOPENDRIUM Adans., 1763 = Phyllitis.

Scyphofilix Aud. de Petit Thouars, 1811 (no type).

Selliguea Bory., 1824 (type not named).

SITOBOLIUM Desv., 1827 = Dennstaedtia.

Sphaeropteris Bernh., 1801 (*Polypodium medullare*).

STEGANIA R. Br., 1810 = Struthiopteris Scop.

Stenogramme Blume, 1828 (*S. aspidioides*).

Struthiopteris Scopoli, 1760 (*Osmunda spicant*).

STEGANIA R. Br., 1810 (*S. Patersoni*).

STRUTHIOPTERIS Willd., 1809 = *Matteuccia Todaro*!

STRUTHIOPTERIS Bernh., 1801 = *Osmunda*.

Taenitis Willd., 1806 (*Pteris blechnoides* Willd.).

Tectaria Cav., 1802 (*Polypodium phymatodes*).

TEGULARIA Hornsch., 1825 = *Didymochlaena*.

TELEOZOMA R. Br., 1823 = *Ceratopteris*.

THELYPTERIS Adans., 1763 = *Pteris*.

Trichomanes L., 1753 (*T. crispum*).

PYXIDARIA Gled., 1764 (no type).

ACHOMANES Neck., 1790 (no type).

DIDYMOGLOSSUM Desv., 1827 (*Trichomanes muscoides*).

TRICHIPTERIS Presl, 1829 = *Alsophila*.

Todea Willd., 1802 (*Acrostichum barbatum*).

UGENA Cav., 1801 = *Lygodium*.

Vittaria J. E. Smith, 1793 (*Pteris lineata* L.).

VALLIFILIX Aud. de Petit Thouars, 1811 = *Lygodium*.

WIBELIA Bernh., 1801 = *Hymenophyllum*.

Woodsia R. Br., 1810* (*W. Ilvensis*).

PHYSEMATIUM Kaulf., 1829 (*P. molle*).

Woodwardia J. E. Smith, 1793 (*Acrostichum areolatum* L.).

Xiphopteris Kaulf., 1820! (*Grammitis serrulata*).

* The name usually quoted 1813 really dates from 1810 when it was proposed as *Woodia*.